GUJARAT TECHNOLOGICAL UNIVERSITY ME - SEMESTER- I (New course)• REMEDIAL EXAMINATION – SUMMER 2015 Subject Code: 2713108 Date:13/05/2015 Subject Name: MEDICAL INSTRUMENTATION & SYSTEMS							
				Time: 10:30 am to 1:00 pm Total Marks: '			70
				Instructions:			
	1. 2.	Make suitable assumptions wherever necessary.					
	3.	Figures to the right indicate full marks.					
Q.1	(a) (b)	Enlist and explain static Op-Amp limitations. Explain any two dynamic limitation of Op-Amp with necessary equations.	07 07				
Q.2	<b>(a)</b>	Derive equations of current to voltage converter.	07				
	<b>(b)</b>	Explain floating load currents amplifier with necessary equations.	07				
	<b>(b)</b>	Explain any first order active filters that is obtain by placing a capacitor as one of its external components.	07				
Q.3	(a) (b)	Enlist and explain Safety Standards in Medical Electronic Amplifiers. Compare Instrumentation amplifier with conventional amplifier. Why instrumentation amplifier is preferable for biomedical application? Derive gain equation of instrumentation amplifier.	07 07				
03	(a)	OR Explain common types of medical isolation amplifier	07				
Q.3	(a) (b)	Give brief descriptions of random noise in Biomedical measurement systems.	07 07				
Q.4	(a)	Draw noise equivalent circuit for any BJT amplifier. And derive necessary equation for noise.	07				
	(b)	Give design aspects of Voltage controlled oscillator. OR	07				
Q.4	<b>(a)</b>	Draw noise equivalent circuit for any JFET amplifier. And derive necessary equation for noise.	07				
	(b)	Give design aspects of V to F converter.	07				
Q.5	<b>(a)</b>	Explain design aspects of weighted capacitor type DAC. Derive necessary equations.	07				
	(b)	<ul> <li>Explain below given phenomena in detail.</li> <li>Aliasing</li> <li>quantization noise</li> </ul>	07				
Q.5	(a)	Draw and explain functional diagram of dual slope ADC.	07				
	<b>(b)</b>	Explain Modulation types of Biomedical Signals.	07				

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